The Effects of Nicotine Usage on Mental Health in Adolescents

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Introduction

Approximately 17% of adults reported trying their first cigarette between the ages of 19 and 26 (Dietz, 2013). Vaping and nicotine use among adolescents is very prevalent in today's world, as the percentage of nicotine users of this age increased from 1.5% in 2011 to almost 40% in 2019 (Becker, 2020). In turn, studies show that most adolescents who partake in nicotine usage are more likely to report a lower happiness level, compared to those who do not (Janjua, 2023). Nicotine can be found in all tobacco products, deriving from the tobacco plant, Including cigarettes, non-combusted cigarettes, cigars, smokeless tobacco, hookah tobacco, and most e-cigarette (FDA, 2022). In terms of adolescents, the concentration of use mostly lies in e-cigarettes, more commonly known as “vapes” or after a more prominent brand JUUL, which can be attributed to aggressive marketing, appealing flavors, perceptions of lower harm (compared to cigarettes), social media influences, and a design that is easily hidden and secretive (Becker, 2020). The problem with nicotine arises due to addiction patterns of adolescents, leading to a negative effect on their mental health. Healthy People 2030 summarizes that adolescents are more likely to use e-cigarettes than any other nicotine product, which is highly addictive and can harm brain development (2020).They outline objectives to reduce current e-cigarette use in adolescents by at least 3% by 2030 by implementing price increases and smoke free policies (2020).

https://www.fda.gov/tobacco-products/health-effects-tobacco-use/nicotine-why-tobacco-products-are-addictive#:~:text=All%20tobacco%20products%20contain%20nicotine,%2C%20and%20most%20e%2Dcigarettes.

https://academic.oup.com/ntr/article/23/3/415/5903402?login=true

https://www-sciencedirect-com.libproxy.clemson.edu/science/article/pii/S0306460323001491

https://health.gov/healthypeople/objectives-and-data/browse-objectives/tobacco-use/reduce-current-e-cigarette-use-adolescents-tu-05

https://journals.lww.com/journaladdictionmedicine/abstract/2019/10000/depressive_symptoms_and_suicidality_in_adolescents.5.aspx

Theory

Theories that are used to explain determinants of health and behavior, provide a framework to identify patterns and relationships that can be applied in various ways across many studies, populations, and health behaviors. A recent study by R. Austin and his colleagues

highlights advantages and disadvantages of theory-based models in social and behavioral determinants of health (Austin, 2023). Although disadvantages to theory arise in terms of assumptions and limitations, because of the multiple constructs of each specific theory, it is acceptable to manipulate theories to conform to a specific study while still remaining in the theory framework (Austin, 2023). In the case of nicotine use, The Social Cognitive Theory and Social Ecological Model are 2 theories that can be applied and used to explain behavior in partaking in nicotine use in adolescents, and how this is tied to the mental health of this group.

Social Cognitive Theory

Social cognitive theory (SCT) explains that people self-regulate by processing information in advance of performing behavior, and as a result of their behavior. It combines Albert Bandura's triadic interaction between one's behavior, their environment and personal factors within the individual. In regard to nicotine use, social cognitive theory is used to predict the likelihood of using nicotine products, by means of vicarious learning and self-efficacy beliefs (Gullo, 2021). A major part of the cognition portion of the theory is self efficacy, which is explained in the literature to be the belief in your own ability to be able to do something. In this case, the ability to quit the use of nicotine as an adolescent, and how this connects to self confidence as well as personal negative emotional states (Jones, 2020). Because of the lack of sufficient studies observing the relationship between anxiety and nicotine use, this cross sectional study aims to explain and find methods between these two things in adolescents by means of self efficacy (Jones, 2020). Self efficacy was assessed using the General Self Efficacy Scale (GSE), a ten question scale survey (Jones, 2020). Based on the study done by Jones and his colleagues, it was found that adolescents that never partook in nicotine devices had a significantly higher self efficacy score than everyday users. High self-efficacy has been established in the literature as a contributory factor to quitting e-cigarette behavior. It was found that the longer period of time you use nicotine, the lower your self efficacy is (along with a higher level of depression) making it much harder for you to believe that you can complete the action of quitting (Jones, 2020). In a parallel study that examined cannabis use disorder, that has very similar effects as nicotine use disorder, SCT was used to examine the likelihood of patients to be able to quit their using, through the combination of biological and cognitive factors and how this affects quitting behavior (Gullo, 2021). It is shown that *reward drive* is a large part of SCT connected to the willingness for people with nicotine or substance addiction to remain addicted. Someone with a

higher reward drive predicts a greater relationship between nicotine cues and responses to consuming them (Gullo, 2021), which is connected to dopamine levels in the brain. If an adolescent's dopamine system is consumed by cues from nicotine, there will be less room for natural dopamine which reduces depression (Gullo, 2021). Social Cognitive Theory works to explain the relationship between someone's belief in the ability to quit nicotine, as well as why people partake in the act, combining personal, environmental, and behavioral factors.
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https://www-ncbi-nlm-nih-gov.libproxy.clemson.edu/pmc/articles/PMC8273258/
https://web-s-ebscohost-com.libproxy.clemson.edu/ehost/pdfviewer/pdfviewer?vid=5&sid=57f3589b-a44a-4a86-9d97-1651a653e4bc%40redis

Social Ecological Model

The social ecological model (SCM) is a widely accepted theory that was developed by psychologist Urie Bronfenbrenner in the late 1970s, which aims to combine factors to explain determinants of health related behavior. Factors of individual, interpersonal, organizational/community, and society/policy factors affecting e-cigarette use among adolescents and young adults were studied in this review by means of literature research from sophisticated sources (Han, 2022). Han and his colleagues focus on dynamic interplay between the environment and behavior of these adolescents with a holistic approach, while taking into account the factors listed prior. It is explained prior to the research the meaning of each of the levels of the social ecological model: individual level (health and personal traits), the interpersonal level (one's closest social circle), the community level (the settings for interactions), and the societal level (social and cultural norms, as well as diverse social policies) (Han, 2022). The authors used 4 levels of analysis of all of the literature and studies they found to find conclusions based on the social ecological model in terms of the connection between adolescents and the use of e-cigarettes (which contain nicotine). After these layers of review, the information found was categorized into the levels of the model (Han, 2022). The individual level was found to include demographics (age, gender, race, pocket money, school performance), health related behaviors (use of other nicotine or tobacco products prior), mental health (depression, stress, eating disorders), perception (that nicotine is less harmful than it is), and characteristics (attractiveness and flavors associated with nicotine) (Han, 2022). All of this has to do with the values, beliefs and perceptions of the individual, but mental health sticks out here

analyzing the relationship between nicotine and mental health. The literature goes into depth about how youth that have reported accounts of nicotine use reported increased odds of suicidal ideation and depressive symptoms compared to those who report no use (Chadi, 2019). This means that the relationship between nicotine use in adolescents and mental health is to be found on the individual level when analyzing the SEM. Moving on, the interpersonal level with this relationship was organized by Han and his colleagues into two areas one being friends (peer pressure or bullying victimization and high correlation between friends who both participate in nicotine use), as well as family (parental smoking and parental advice, both found to be risk factors) (Han, 2022). The organizational/community factors were organized into home (Availability or exposure to nicotine), school (smoking bans, extracurriculars), engaged online community, accessibility (easiness of buying from retailers), and residence area (high risk in metropolitan areas) (Han, 2022). Lastly, the society/policy level is broken into 2 factors of regulations (higher minimum legal sale, higher price, less flavors), and media (positive and negative) (Han, 2022). As you can see, this model is very efficient in organizing the dimensions of the reasons why adolescents partake in nicotine usage and also how mental health falls into this. The conclusions of this study summarize that this model works to help promote efficient intervention for minimizing the gap of how many adolescents partake in nicotine usage, especially when it leads to poor mental health. Han and his colleagues concluded that more longitudinal studies on this topic will help us address these problems even better, to get a better understanding of changes over time. He also concluded that not one of the layers of the model can stand alone in explanation of this relationship without the other, as each of the layers exposes adolescents to different avenues of relationship to usage of non-usage of nicotine products, proving the effectiveness of the model topics of determinants such as this one. In the end, in order for researchers, clinicians, and policymakers to develop and apply more effective interventions to prevent nicotine use in adolescence (that ultimately leads to poor mental health), all factors must be identified (Han, 2022).

https://journals.lww.com/journaladdictionmedicine/abstract/2019/10000/depressive_symptoms_and_suicidality_in_adolescents.5.aspx

https://www-sciencedirect-com.libproxy.clemson.edu/science/article/pii/S0306460322001915#b0070

Trans-Theoretical Model

It is explained in the literature that the trans-theoretical model of behavior change aims to account for the explanation of health behavior change as a process (Martinasek, 2021). In this instance, for the explanation of development of addictive processes to nicotine by adolescents. A cross-sectional survey design study was conducted in order to figure out which stages of the transtheoretical model were most prevalent in college aged nicotine users (Martinasek, 2021). The aim of this usage of this particular theory was to better understand where college-aged nicotine users stand in efforts to continue or discontinue usage of nicotine. Martinasek and his colleagues aimed to use understanding from this study to find where students are in the stages of change in addiction which can help to inform behavioral message campaigns enabling more focused targeting of messages and efforts to reduce consumption. Five stages were identified for analysis of their findings: (1) precontemplation stage (where people do not intend to stop nicotine usage in the next 6 months), (2) contemplation stage (where people are weighing their pros and cons of changing their nicotine usage habits in the next 6 months), (3) preparation stage (people are starting to make small changes and are deciding to quit nicotine use in the next month), (4) action stage (people have quit nicotine use for less than 6 months), and (5) maintenance stage (people maintained no nicotine usage for more than 6 months) (Martinasek, 2021). It was found in the results that most participants stood in the maintenance stage, but close behind were people that fell in the precontemplation stage. Most participants either use nicotine and don't plan on quitting, or don't use nicotine and don't plan on starting usage again. Least amount of participants were found in the preparation stage, showing that most people have their mind made up about their health behavior towards nicotine usage, rather than on the fence about changing behavior (Martinasek, 2021). Establishing these differences are important in addressing these health behaviors, and being informed on what stage of the transtheoretical model adolescents are most prevalent, will lead to proper intervention. It is also found in study that nicotine usage in adolescents has a direct correlation to partaking in alternate risk behaviors and determination (Roma, 2019). This includes high-fat diets, low fruit and vegetable consumptions, poor sleep hygiene, and more, that directly tie into these adolescents mental health. Young adults that consume fewer healthy foods tend to be connected than those without, which is connected to nicotine usage (Korczak, 2021).

As you can see, these three theories can be used upon the relationship between adolescent nicotine usage and mental health, in order to properly provoke intervention for solution, while examining the correct layers or stages, and establishing relationships between all factors.
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https://web-s-ebscohost-com.libproxy.clemson.edu/ehost/pdfviewer/pdfviewer?vid=5&sid=43ca4c78-30eb-4de7-b67f-29fc1b4a8a24%40redis

Intrapersonal Factors

Specific intrapersonal factors, such as motivation, beliefs, lifestyle, and attitudes affect the onset of nicotine usage and addiction of adolescents. Noella A. Dietz and her colleagues researched and conducted a cross-sectional study on the relationship between an individual's attitudes/beliefs and nicotine usage in order to come up with prevention techniques for smoking and nicotine use in young adults (Dietz, 2013). Attitudes and beliefs towards certain habits in adolescent life contributed greatly to their nicotine outcome, for example when someone has a positive attitude toward drinking habits and bar scene, tobacco and nicotine use is more likely (Dietz, 2013). As well as having negative attitudes towards the health risk factors of nicotine use for young adults has a correlation to non-nicotine use (Dietz, 2013). They also highlight what causes these certain attitudes, stemming from someone's environment, how this leads to certain attitudes and beliefs, and how this leads to susceptibility of nicotine and later usage of it (Dietz, 2013). From this, Dietz and colleagues conducted their study and found that once these young adults make decisions about their beliefs and attitudes, the likeness of segregation between the 2 groups of nicotine use and non nicotine use is higher, as users are being reinforced by similar beliefs to their own, as well as nonusers (Dietz, 2013). These reinforcements provoke adolescents to be susceptible to peer pressure, as well as have the pressure to assess the beliefs that they had been prior compared to what they are exposed to now, and be able to conceptualize this. This can put a lot of pressure on what to do and not to do, especially when the young adult years are transitional years where young people move from economic and social dependence to independence, affecting proper brain development and mental health (Dietz, 2013). Tied to this, adolescents are experiencing a transitional time where if they are nicotine users, they are transitioning from experimenting with nicotine to nicotine dependence, which is recognized as a psychoactive substance dependence disorder, directly referring to the brain (Dietz, 2013).

Adding to this, people that ignore their nicotine dependence and are exhibiting impaired control are recognized as having a mental medical condition, in response to this pressure that is rooted in someone's beliefs and lifestyle choices (Dietz, 2013). Furthermore, there are mixed feelings from adolescents about how nicotine usage makes them feel and look to others around them: self image. A study by Cheney and his colleagues pointed out that some adolescents associate their self image with nicotine use as making them look prestigious, or for girls make them feel more feminine rather than they would smoking a cigarette (2018). On the other hand, some adolescents things e-cigarette use and nicotine makes them appear like a “nerd” or look “douchey”, while some associated nicotine usage with their hobbies, saying that it fit with their identity and made them feel more in touch with who they are (Cheney, 2018). As you can see from the literature , intrapersonal factors such as self-image have a heavy impact on nicotine usage, as well as how the pressure self image puts on a young individual's mental state, especially their identity (Cheney, 2108).

https://www-sciencedirect-com.libproxy.clemson.edu/science/article/pii/S037687161200419X

Interpersonal Factors

Interpersonal factors are a crucial part of many health behavior models today, and these factors are in the scope of a certain person's closest social circle (Han, 2022). Han describes although interpersonal factors differ from person to person, the aspect of your closest circle usually has to do with close family and friends, and additionally a significant other (2022). Due to the fact that nicotine addiction onset begins and ends with adolescence, the people who surround a young adult during their adolescent years immediately have impacts on their willingness or not to begin or even quit nicotine usage (Kendall, 2015).

A parent's method of role modeling directly affects the attitudes, attributes, and actions of an adolescent (Kendall, 2015). Denise Kandall and her colleagues conducted a study that honed in on familial issues on adolescent nicotine dependence (2015). They examined the associations between parental and adolescent lifetime smoking and past-month nicotine dependence in a national sample of parent--adolescent dyads, these dyads included 21, 200 mothers and 13, 800 fathers, each with an adolescent aged 12 to 17 years. A large factor of the study was whether or not the adult or child experienced depression or major depressive episodes. The reason for this was the comorbidity that is seen between depression and nicotine dependence (Kendall, 2015). There was not high prevalence between the two factors, partially due to the time span being

focused on, and the difference between lifetime depression and nicotine dependence in the past year (Kendall, 2015). Although this was the case, prevention methods focused on mental health improvement in adolescents were still provoked, due to the high comorbidity rates between the two (Kendall, 2015). Overall, they found that parental smoking is a very prevalent risk factor for adolescent smoking (Kendall, 2015). The results by Kandall and colleagues show that reducing parental smoking would reduce adolescent smoking (Kandall, 2015). Other preventative methods that were fabricated by Kendall and colleagues included smoking cessation assistance to parents in a pediatric care setting, improving parenting, and reinforcing negative beliefs towards smoking (2015).

Friends or peers that partake in nicotine centered behavior facilitates reinforcement and encouragement for approval that contributes to the onset of smoking or nicotine dependence behavior for an adolescent (Johnson, 2022). The literature suggests that health risk behaviors such as nicotine usage are caused by friendship networks and selection of peers (Johnson, 2022). This study by Johnson and colleagues involved questions for female and male best friends of a group of peers that was as follows, "How many of your four best friends smoked cigarettes during high school?", and the results were examined by altering the type of variable high school peer smoking would act as (Johnson, 2022). There was a strong correlation found between the people who have friends that use nicotine and and the likelihood of them using nicotine, although certain factors increased the likelihood such as pro-smoking norms or smoker social identities (Johnson, 2022). Another study by Patrick and her colleagues highlighted reasons for beginning to vape or use nicotine as an adolescent, and it is shown that reasons including "have a good time with my friends", "to look cool", which can be connected to mental health issues of peer pressure or pressure to fit in (2016). Connected to the literature that states that this explains the link between peer affiliation and developmental mental disorders from being an adolescent to early adulthood (Samek, 2016).

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https://web-s-ebscohost-com.libproxy.clemson.edu/ehost/pdfviewer/pdfviewer?vid=5&sid=f52c0900-1a61-42c9-8693-2c57c2b134e6%40redis (Integration pattern of smoking and nicotine dependence)

https://web-s-ebscohost-com.libproxy.clemson.edu/ehost/pdfviewer/pdfviewer?vid=14&sid=7a860e72-8f36-4523-baa4-8766daad9cca%40redis Peer smoking and the nicotinic receptor genes: an examination of genetic and https://web-s-ebscohost-com.libproxy.clemson.edu/ehost/pdfviewer/pdfviewer?vid=11&sid=73b90cad-1298-43a2-b07c-8416e6f54be2%40redis Antisocial peer affiliation and externalizing disorders in the transition f

Organizational, Community, Environment, and Policy Factors

Factors that revolve around organizational, community, environmental, and policy heavily influence young adults exposure to nicotine products, surroundings that contribute to various levels of mental health, and ways to combat mental health disparities due to nicotine.

Environment plays a prominent role in the onset of vaping, especially in places such as high school and college (Cheney, 2018). Cheney and his colleagues pointed out that in settings such as these as an adolescent, that many young adults are open to trying new things, such as nicotine, if everyone around them is partaking, in other words, they are not worried about the health effects as much as they are fitting into the environment around them (2018). It is said in the literature that 40% of e-cigarette users were non-smokers before adapting an addiction, when the whole appeal of e-cigarettes in the first place was to reduce the amount of cigarette use (Cheney, 2018). Back to the environment, it is also said that even watching someone use an e-cigarette makes adolescents desire to indulge in nicotine intake, showing how much your environment can affect your actions (Cheney, 2018). Cheney and his colleagues conducted a study to examine which factors of an adolescents environment contributes most to their nicotine influence (2018). They did this by interviewing undergraduate college students with a series of questions focused around their relationship with vaping and nicotine, as well as the relationship of the people around them with nicotine, as well as how the people around them view nicotine (Cheney, 2018). The results hone in on the impacts of the environment including the environment that was made by your family as a child, as well as the environment you are introduced to as you begin to make relationships with friends (especially in college) (Cheney, 2018). For the most part in terms of family, there were two outcomes, one being that the family environment does not promote vaping, as many parents take nicotine devices, creating an environment that actually inhibits nicotine use. While other students claim that their parents would rather them vape than smoke, creating an environment that doesn't prompte nicotine use,

but doesn't forbid it, depending on the parenting style and past experiences of the parents (Cheney, 2018). In terms of the environment that college students new friends appear to fabricate, there are also differences in responses from these undergraduates, one being that adolescents feel awkward vaping in front of their new friends, because they don't know if they accept it, so they prefer to do it alone in their room, which could lead to less use of nicotine (Cheney, 2018). Other say that their friends create an acceptable environment to vaping whether they are indifferent to the fact that they partake in nicotine usage, or actively promote it (Cheney, 2018). No matter the environment that is built around these adolescents, the sense of belonging or not belonging will affect the way they feel from an identity perspective and many students say that vaping is a social influence, that they have formed a community of nicotine users, which made some people feel awkward when not partaking, which can influence their mental health relating to identity and conformity (Cheney, 2018).

Cheney's findings also evaluated how the policy and organization roles play into the influence of nicotine usage in undergraduate students. Due to many campuses having very blunt anti-tobacco policies and ban's on smoking and tobacco, led many students to become confused (Cheney, 2018). Many students were confused on the forwardness of the ban, is e-cigarette use considered smoking, so most undergraduates ignored the ban, this provokes questions on the clarity of certain policies that affect health behavior (Cheney, 2018). Although most students ignored the ban as an excuse of it not blatantly saying "no vaping", some students took the confusion seriously, and would only vape in their homes for the sake of their fellow peers, while other non-vaping students realized the confusion, and voiced their opinion to make change, trying to avoid a bad reputation of their university (Cheney, 2018). Although almost all facilities nowadays are smoke-free, undergraduates claim that it is very easy to hide vaping and nicotine use indoors, promoting use compared to that of cigarettes (Cheney, 2018). This provoked the initiation for more vaping specific policy implementations on college campuses in the future (Cheney, 2018).

The community aspect that plays a role in nicotine usage of adolescents revolves around community member interjections, or spaces of a community (Cheney, 2018). Many students claimed that most community member interjections were smoking related, but although they had the nicotine alternative, so it wasn't much of a problem, although there were some accounts regarding not wanting to be frowned upon in any way from community members (Cheney,

2018). This social pressure plays into the way adolescents are viewed, especially by people in places of power in their community, affecting the way they act in terms of perspectives and pressure, overall affecting their mental health (Cheney, 2018).

Overall, arents, community members, campus policy, and the physical environment all influence where and when adolescents partake in nicotine usage, and how they react to it mentally (Cheney, 2018). Students transitioning to a new environment in college, also affects their so called nicotine environment, and how this affects nicotine behavior. Conclusion shows that many adolescents worry about the negative social image effects that are associated with nicotine use, which are reinforced by demeaning health messages from providers (Chaney, 2018). Fromthis, health communication messages to prevent college student vaping should incorporate alternative messages that are important to college students, such as respect for others and social image, using intrapersonal communication to make change, instead of trying to change the overall environment, even when it is a highly contributing factor (Cheney, 2018). Another outcome of studies such as this is reaching parents and educating them on how to talk their adolescent through this time in their life to discourage vaping, especially how it affects social image and can be demeaning to mental health (Cheney, 2018).

Using the Ecological Model to understand influences on college student vaping

Suggestions for Intervention

https://www.proquest.com/docview/2724154597

https://academic.oup.com/tbm/article/13/8/589/7135958?login=true

Resources

Environment

1. Youth mental health and nicotine vape use: The moderating role of rural-urban/suburban school environments: https://www-sciencedirect-com.libproxy.clemson.edu/science/article/pii/S0306460323002253
2. Adolescent Tobacco Use in Urban Versus Rural Areas of the United States: The Influence of Tobacco Control Policy Environments: https://www-sciencedirect-com.libproxy.clemson.edu/science/article/pii/S1054139X17300629

General Info

1. Psychological distress and cannabis vaping among U.S. adolescents: https://www-sciencedirect-com.libproxy.clemson.edu/science/article/pii/S0749379723004300
2. Systematic Review of Electronic Cigarette Use (Vaping) and Mental Health Comorbidity Among Adolescents and Young Adults: https://academic.oup.com/ntr/article/23/3/415/5903402?login=true
3. Social, educational, and psychological health correlates of e-cigarette and combustible cigarette use among adolescents in the US from 2015 to 2021.: https://www-sciencedirect-com.libproxy.clemson.edu/science/article/pii/S0306460323001491

Implications/Recommendations

1. Barriers and facilitators to address vaping in Massachusetts schools: a mixed-methods study of school-based stakeholders (AND ENVIRONMENT): https://academic-oup-com.libproxy.clemson.edu/tbm/article/13/8/589/7135958
2. School-based preventive interventions targeting e-cigarette use among adolescents: a systematic review protocol: https://www.proquest.com/docview/2724154597?accountid=6167

Theory

1. A systematic review of socio-ecological factors influencing current e-cigarette use among adolescents and young adults (AND IMPLICATIONS): https://www-sciencedirect-com.libproxy.clemson.edu/science/article/pii/S0306460322001915
2. E-cigarette use and onset of first cigarette smoking among adolescents: An empirical test of the 'common liability' theory: https://f1000research.com/articles/8-2099 ????????
3. SELF EFFICACY? A Retrospective Cross-Sectional Study on the Prevalence of E-cigarette Use Among College Students: https://web-s-ebscohost-com.libproxy.clemson.edu/ehost/pdfviewer/pdfviewer?vid=19&sid=d6095dc0-8aa8-4921-9e7f-c9b861e30fd9%40redis
4. Creating More Effective Vape Education Campaigns: Qualitative Feedback from Teens in Nine U.S. States:

https://www-tandfonline-com.libproxy.clemson.edu/doi/abs/10.1080/10826084.2023.2165411

Intrapersonal

1. Associations between personality and uptake of tobacco smoking: Do they differ across adolescence?: https://web-s-ebscohost-com.libproxy.clemson.edu/ehost/pdfviewer/pdfviewer?vid=46&sid=d6095dc0-8aa8-4921-9e7f-c9b861e30fd9%40redis

Interpersonal

1. Intergenerational Patterns of Smoking and Nicotine Dependence Among US Adolescents: https://web-s-ebscohost-com.libproxy.clemson.edu/ehost/pdfviewer/pdfviewer?vid=49&sid=d6095dc0-8aa8-4921-9e7f-c9b861e30fd9%40redis

Mental Health focus

1. https://journals.lww.com/journaladdictionmedicine/abstract/2019/10000/depressive_symptoms_and_suicidality_in_adolescents.5.aspx